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## **REMARKS**

Claims 1-45 remain pending in the case, claim 46 having been cancelled above. The Office Action rejected claims 1-17, 19-23, and 25-46 and objected to claims 18, 24, and 46. More particularly, the Office Action:

- rejected claims 1, 3, 5-6, 8, 11-17, 19-21, 25, 29-31, 33, and 35-44 as anticipated under 35 U.S.C. § 102 (b) by U.S. Patent Application Serial No. 09/745,696, filed December 22, 2000, and published October 17, 2002 (“Smith *et al.*”);
- rejected claims 2, 4, 22-23, 26-27, and 32 as obvious at the time they were made under 35 U.S.C. § 103 (a) in view of Smith *et al.* combined with U.S. Letters Patent 5,683,229 (“Wangler”);
- rejected claims 1-2, 4-11, 15-17, 20, 25-35, 37-38, 41-42, and 44-46 as anticipated under 35 U.S.C. § 102 (b) by U.S. Letters Patent 5,644,386 (“Jenkins *et al.*”);
- rejected claims 12-14, 36, and 39-40 as obvious at the time they were made under 35 U.S.C. § 103 (a) in view of Jenkins *et al.* combined with Smith *et al.*; and
- objected to claims 18 and 24 as allowable but for their dependence from rejected base claims.

Applicant traverses each of the rejections.

### **I. RESPONSE TO INFORMALITIES**

Applicant notes that the Office Action contains no indication on the acceptability of the drawings. In the absence of objection, Applicant considers the drawings to have been accepted.

The Office Action objected to claims 18 and 24 as allowable but for their dependence from rejected base claims. Since Applicant believes the base claims to be allowable, as well, Applicant has chosen not to amend the claims at this time to cure the objection.

The Office Action also “provisionally objected” to claim 46 as a substantial duplicate of claim 45. Claim 46 has been canceled above, and so this objection has been cured.

### **II. RESPONSE TO SUBSTANTIVE MATTERS**

**A. Smith *et al.* Fails to Anticipate Claims 1, 3, 5-6, 8, 11-17, 19-21, 25, 29-31, 33, and 35-44**

The Office Action rejected claims 1, 3, 5-6, 8, 11-17, 19-21, 25, 29-31, 33, and 35-44 as anticipated under 35 U.S.C. § 102 (b) by U.S. Patent Application Serial No. 09/745,696, filed December 22, 2000, and published October 17, 2002 (“Smith *et al.*”). The anticipation rejection rests on a misconstruction of Smith *et al.* The Office Action formulates the anticipation rejection as follows:

Smith *et al.* [sic] disclose a method and associated apparatus for targeting comprising:

- a) program storage medium for storing 3-dimensional data; para [38]
- b) a controller for generating the 3-dimensional data; para [37]; last 7 lines
- c) a controller indicating a subset of the 3-dimensional data [sic]; and para [37, 50]
- d) targeting the location of the subset. para [44, 50]

Detailed Action, p. 2, ¶ 3. Note that this formulation erroneously assumes that Smith *et al.* teaches three-dimensional data without ever establishing the proposition.

The independent claims each recite “three-dimensional data representing a field of view.” (cl. 1, lines 2, 4; cl. 11, lines 2, 4, 6; cl. 21, lines 2, 5, 6, 9; cl. 25, lines 2-6, 8; cl. 31, lines 2, 4; cl. 35, lines 2-5) Smith *et al.* fails to teach anything regarding three-dimensional data. In paragraph 34, Smith *et al.* teaches data acquisition in a RS-170 video format or in a digital photographic. Either way, Smith *et al.* teaches acquisition of photographic or video data, which are both two-dimensional data. The Office has, at a minimum, failed to produce any evidence that the RS-170 standard may be employed with three-dimensional data or that the camera of Smith *et al.* acquires three-dimensional data.

In the exemplary embodiment of Smith *et al.*, as discussed in ¶¶ 42, 48, the data is undeniably two-dimensional data. In ¶48, Smith *et al.* states that, “[a]lthough the image may have only two dimensions, a third dimension is implicit (e.g., due to the focus position of an automated microscope when the image was captured).” Thus, the third dimension is not present in the imagery data captured by the camera, but is instead inferred from the “focus position” of the microscope. Furthermore, this inferred third-dimension is not representative of the field of view, but rather the position of the microscope, from which is inferred the distance to the

specimen. Thus, not only is the third dimension not captured in the data, it is only arrived at through multiple inferences, each of which introduces new error and compounds earlier errors.

Thus, Smith *et al.* fails to anticipate any of claims 1, 3, 5-6, 8, 11-17, 19-21, 25, 29-31, 33, and 35-44. An anticipating reference, by definition, must disclose every limitation of the rejected claim in the same relationship to one another as set forth in the claim. *In re Bond*, 15 U.S.P.Q.2d (BNA) 1566, 1567 (Fed. Cir. 1990). Office policy echoes this formulation. M.P.E.P. § 2131. Since each of the independent claims 1, 11, 21, 25, 31, and 35 recites “three-dimensional data”, so do the dependent claims 5-6, 8, 12-17, 19-20, 29-30, 33, and 36-44. 35 U.S.C. § 112, ¶4. As established above, Smith *et al.* teaches a method and apparatus employing two-dimensional data, rather than three-dimensional data. Accordingly, Smith *et al.* fails to anticipate any of claims 1, 3, 5-6, 8, 11-17, 19-21, 25, 29-31, 33, and 35-44. Applicant accordingly requests that the rejections be withdrawn.

**B. Smith *et al.* and Wangler Fail to Render Obvious Claims 2, 4, 22-23, 26-27, and 32**

The Office Action rejected claims 2, 4, 22-23, 26-27, and 32 as obvious at the time they were made under 35 U.S.C. § 103 (a) in view of Smith *et al.* combined with U.S. Letters Patent 5,683,229 (“Wangler”). Applicant respectfully submits that the rejection fails regardless of what Wangler teaches and whether Wangler can be combined with Smith *et al.* More particularly, the rejections fail because Smith *et al.* is outside the scope and content of the prior art. Furthermore, Smith *et al.* is not properly combinable with Wangler. Thus, Applicant requests the rejections be withdrawn.

**1. Smith *et al.* is Outside the Scope and Content of the Prior Art**

It is the Office's burden to establish *prima facie* that the claimed invention is obvious, and this includes the burden of showing that the references are within the scope and content of the prior art. *In re Oetiker*, 24 U.S.P.Q.2d (BNA) 1443, 1445-46 (Fed. Cir. 1992). A reference can be asserted against the claimed invention under §103 only if (1) it is within Applicant's field of endeavor, or (2) is reasonably pertinent to the problem facing Applicant even though not within Applicant's field of endeavor. *In re Clay*, 23 U.S.P.Q.2d (BNA) 1058, 1060 (Fed. Cir. 1992).

Smith *et al.* is directed to the use of two-dimensional data, as opposed to three-dimensional data. The third dimension in the data of Applicant's invention facilitates a ranging capability with an accuracy unobtainable from two-dimensional data. The difficulties of working in two-dimensional data are discussed in Applicant's specification, from p. 2, line 23 to p. 3, line 6. Applicant has therefore defined the use of two-dimensional data as a part of the problem addressed, thereby removing two-dimensional data techniques from the scope and content of the prior art.

More precisely, Smith *et al.* does not operate on three-dimensional data, as is established above. In this respect, see especially ¶¶ 34, 42, 48 of Smith *et al.* Thus, Smith *et al.* is not within Applicant's field of endeavor and can be within the scope and content of the prior art only if it is "reasonably pertinent" to Applicant's invention. *In re Clay*, 966 F.2d 656, 659 (Fed. Cir. 1992) (reversing Board holding of obviousness). The discussion in *Clay* is pertinent to the present case. In addressing the first part of the test for analogous art, the Federal Circuit reasoned:

The PTO argues that [the reference] and [Applicant's] inventions are part of a common endeavor—"maximizing withdrawal of petroleum stored in petroleum reservoirs." However, [the reference] cannot be considered to be within [Applicant's] field of endeavor merely because both relate to the petroleum industry. ...[Applicant's] field of endeavor is the *storage* of refined liquid hydrocarbons. The field of endeavor of the [reference], on the other hand, is the *extraction* of crude petroleum. The Board clearly erred in considering [the reference] to be within the same field of endeavor as [Applicant's].

*Clay*, 23 U.S.P.Q.2d (BNA) at 1060. This reasoning reads directly on the present case with only slight modification for the technologies involved. With respect to the second part of the test, the Federal Circuit, after a discussion of the two inventions, held:

A person having ordinary skill in the art would not reasonably have expected to solve the problem of dead volume in tanks for storing refined petroleum by considering a reference dealing with pluggin underground formation anomalies. The Board's finding to the contrary is clearly erroneous.

*Clay*, 23 U.S.P.Q.2d (BNA) at 1061. Again, with some modification for the involved technologies, the reasoning applies directly to the present case. The use of two-dimensional data, as in Smith *et al.*, is outside the scope and content of the prior art.

## 2. Smith et al. is Not Properly Combinable with Wrangler

Smith *et al.* also is not properly combinable with Wrangler. The Office cites Wrangler for teaching a “LADAR camera.”<sup>1</sup> It is clear from Wrangler’s discussion that the disclosed “camera” acquires three-dimensional data. As was established above, Smith *et al.* employs two-dimensional data (*see* ¶¶ 34, 42, 48), which creates a host of problems the invention seeks to redress (*see* from p. 2, line 23 to p. 3, line 6). The Office’s sole justification is to substitute one type of camera for another, but the Office fails to establish why those in the art would seek to do so.

It is the Office’s burden to establish *prima facie* that the claimed invention is obvious and, where multiple references are cited, this includes the burden of establishing that the references are combinable. *In re Oetiker*, 24 U.S.P.Q.2d (BNA) 1443, 1445-46 (Fed. Cir. 1992). “[A] proper analysis under § 103 requires, inter alia, consideration of two factors: (1) whether the prior art would have suggested to those of ordinary skill in the art that they should make the claimed composition or device, or carry out the claimed process; and (2) whether the prior art would also have revealed that in so making or carrying out, those of ordinary skill would have a reasonable expectation of success. Both the suggestion and the reasonable expectation of success must be founded in the prior art, not in the applicant’s disclosure.” *In re Vaeck*, 20 USPQ2d 1438 (Fed. Cir. 1991) (citations omitted).

The Office has failed to identify either the requisite suggestion or expectation of success. The only suggestion in the record that three-dimensional data can be employed to overcome the cited deficiencies of two-dimensional data is found in Applicant’s specification, which cannot be used against Applicant in this manner. The Office merely, and summarily, states that it would have been “obvious” to substitute Wagner’s “camera” for the camera of Smith *et al.* However, “[t]he mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification.” *In re Gordon*, 221 U.S.P.Q. (BNA) 1125, 1127 (Fed. Cir. 1984); *In re Brouwer*, 37 U.S.P.Q.2d (BNA) 1663, 1666 (Fed. Cir. 1995); *In re Ochiai*, 37 U.S.P.Q.2d (BNA) 1127, 1131 (Fed. Cir. 1995).

Furthermore, suggestion or motivation to combine the teachings of two or more references cannot be supplied through abstraction but must be grounded in practical

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<sup>1</sup> Applicant concedes that Wrangler uses the term “camera,” but respectfully submits that the LADAR system of Wrangler is not a “camera”, especially in the sense of the “camera” employed by Smith *et al.*

considerations flowing from "positive, concrete evidence of record which justifies a combination of primary and secondary references." *In re Regal*, 188 U.S.P.Q. 136, 139 (C.C.P.A. 1975) (n. 6); *In re Yates*, 211 U.S.P.Q. (BNA) 1149, 1151 (C.C.P.A. 1981). A simple assertion such as the one offered in this case that such a combination would be obvious to one of ordinary skill in the art cannot substitute for the type of evidence required by *Regal*. See *In re Fine*, 5 USPQ2d 1596, 1599-1600 (Fed. Cir. 1988); *Yates*, at 1151. Indeed, the lack of suggestion and expectation of success, coupled with the fact that the only suggestion is found in Applicant's specification, indicates that hindsight is being used to find Applicant's claimed invention to have been obvious. See *Fine*, at 1600 (evidence of teaching or suggestion 'essential' to avoid hindsight).

### C. Jenkins et al. Fails to Anticipate Any Claims

The Office Action rejected claims 1-2, 4-11, 15-17, 20, 25-35, 37-38, 41-42, and 44-46 44 as anticipated under 35 U.S.C. § 102 (b) by U.S. Letters Patent 5,644,386 ("Jenkins et al."). An anticipating reference, by definition, must disclose every limitation of the rejected claim in the same relationship to one another as set forth in the claim. *In re Bond*, 15 U.S.P.Q.2d (BNA) 1566, 1567 (Fed. Cir. 1990). Office policy echoes this formulation. M.P.E.P. § 2131. Jenkins et al. fails to meet this standard.

More particularly, Jenkins et al. teaches a technique for displaying a subset of a three-dimensional data set, *i.e.*, it segments a subset of data corresponding to a "target", transmits that subset to a remote location, and displays it. This is clearly established from the Abstract. Jenkins et al. does not teach either "sighting" or "targeting." The Office fails to even allege that Jenkins et al. teaches sighting and cites col. 20, lines 14-18 for disclosing "targeting." However, this passage merely describes the data that will ultimately be displayed. Nothing in this passage actually indicates that the object depicted in the data subset, what Jenkins et al. call the "target," is ever actually "targeted."

Applicant notes that the evidence of record further supports this construction. Namely, in the specification as filed, Applicant noted:

**FIG. 7** presents one implementation 700 of the scenario 400 shown in **FIG. 4**. The implementation 700 is modified from a data acquisition and target identification process first shown in:

- U.S. Letters Patent No. 5,644,386, entitled “Visual Recognition System for LADAR Sensors,” issued July 1, 1997, to Loral Vought Systems Corp. as assignee of the inventors Gary Kim Jenkins, *et al.*

This patent discloses a method by which targets are identified from three-dimensional images generated from three-dimensional data. The present invention employs a three-dimensional data set such as the one obtained by this prior art method to both sight and target the controlled system, *i.e.*, a weapon platform in this scenario.

p. 10, lines 10-19. This passage affirmatively establishes that Jenkins *et al.* teaches only data acquisition and target identification without the sighting or targeting as recited in Applicant’s claims.

Thus, Jenkins *et al.* fails to disclose either “sighting” or “targeting” as are recited in Applicant’s independent claims. Note that, since anticipation requires a reference to teach *all* the limitations of the claim, the failure of Jenkins *et al.* to disclose either of these limitations is, in and of itself, sufficient to establish that the anticipation rejections founded on Jenkins *et al.* are improvident. Accordingly, Applicant requests they be withdrawn.

**D. Jenkins *et al.* in Combination with Smith *et al.* Fails to Render Obvious Claims 12-14, 36, and 39-40**

The Office Action rejected claims 12-14, 36, and 39-40 as obvious at the time they were made under 35 U.S.C. § 103 (a) in view of Jenkins *et al.* combined with Smith *et al.* As was established above, Smith *et al.* is outside the scope and content of the prior art applicable to the present invention as claimed. Furthermore, Smith *et al.* is not combinable with Jenkins *et al.* for the same reason it is not combinable with Wangler. Applicant respectfully submits that the *prima facie* case for the rejections predicated on Jenkins *et al.* combined with Smith *et al.* is therefore deficient. Accordingly, Applicant requests that these rejections be withdrawn, as well.

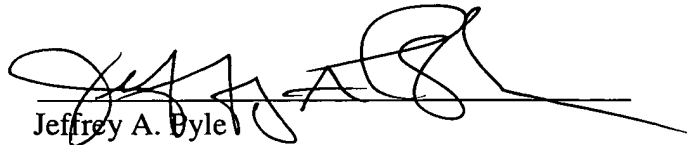
**III. CONCLUDING REMARKS**

Applicant respectfully submits that the application is in condition for allowance, therefore requests that it be allowed to issue.



The Examiner is invited to contact the undersigned attorney at (713) 934-4053 with any questions, comments or suggestions relating to the referenced patent application.

Respectfully submitted,



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